

1. In an additive manufacturing process of the type wherein an object is
2 fabricated by consolidating material increments from a feedstock in accordance with a
description of the object, a method of preventing the build-up of material in a localized
4 area comprising the step of:

treating the object being fabricated, the feedstock, or both, so as to inhibit the
6 consolidation of material increments in the localized area.

2. The method of claim 1, wherein the treatment affects the surface
2 chemistry of the feedstock to prevent local bonding.

3. The method of claim 1, wherein the treatment is applied to a previously
2 built surface of the object.

4. The method of claim 1, wherein the treatment includes the introduction of
2 an oxidizer.

5. The method of claim 1, wherein the oxidizer is a metal nitrate, chlorate,
2 chromate, peroxide, or manganate.

6. The method of claim 1, wherein the treatment includes the introduction of
2 a base or alkali.

7. The method of claim 1, wherein the treatment includes a thin coating of a
2 lubricious material such as tin to prevent the breakup of an oxide layer.

8. The method of claim 1, wherein the treatment forms a coating having a
2 thickness in the range of angstroms to microns to prevent accumulation of Z-axis errors.

9. The method of claim 1, wherein the consolidation is in the form of
2 ultrasonic consolidation.

10. In an additive manufacturing process of the type wherein an object is
2 fabricated by consolidating material increments from a feedstock in accordance with a
description of the object, a method of preventing the build-up of material in a particular
4 area comprising the steps of:

analyzing the description of the object to determine if an intrinsic support would
6 be necessary or desirable to the fabrication thereof;

determining whether localized, inhibited consolidation would be appropriate to
8 the formation of the intrinsic support and, if so:

treating the object being fabricated, the feedstock, or both, so as to inhibit
10 the consolidation of material increments in accordance with the description of the
object.

11. The method of claim 10, wherein the treatment affects the surface
2 chemistry of the feedstock to prevent local bonding.

12. The method of claim 10, wherein the treatment is applied to a previously
2 built surface of the object.

13. The method of claim 10, wherein the treatment includes the introduction
2 of an oxidizer.

14. The method of claim 10, wherein the oxidizer is a metal nitrate, chlorate,
2 chromate, peroxide, or manganate.

15. The method of claim 10, wherein the treatment includes the introduction
2 of a base or alkali.

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16. The method of claim 10, wherein the treatment includes a thin coating of a
2 lubricious material such as tin to prevent the breakup of an oxide layer.

17. The method of claim 10, wherein the treatment forms a coating having a
2 thickness in the range of angstroms to microns to prevent accumulation of Z-axis errors.

18. The method of claim 10, wherein the consolidation is in the form of
2 ultrasonic consolidation.